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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/827,357	04/20/2004	Eui Seok Kum	1594.1333	2604

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WASHINGTON, DC 20005

EXAMINER
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STAFIRA, MICHAEL PATRICK

ART UNIT	PAPER NUMBER
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2886

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/16/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

**Office Action Summary**

Application No.

10/827,357

Applicant(s)

KUM ET AL.

Examiner

Michael P. Stafira

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-27 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 April 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 4/20/2004.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_.

## DETAILED ACTION

### *Priority*

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### *Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

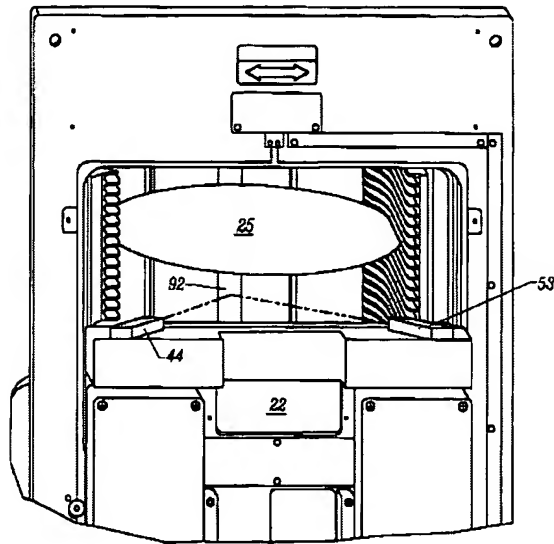
(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-13 are rejected under 35 U.S.C. 102(b) as being anticipated by Rosenquist et al. ('323).

### **Claim 1**

Rosenquist et al. ('323) discloses a cassette (Fig. 1, Ref. 32) having a plurality of slots into which planar objects are inserted (See Fig. 13), and at least one reflector (Fig. 13, Ref. 92) which reflects light beams irradiated into the plurality of slots (See Fig. 13); and a sensor unit having a light emitting unit (Fig. 13, Ref. 44) and a light receiving unit (Fig. 13, Ref. 53), the sensor unit determining whether the planar objects have been inserted into the respective slots by determining whether a light beam, irradiated from the light emitting unit (Fig. 13, Ref. 44), is reflected from the reflector (Fig. 13, Ref. 92) and then received by the light receiving unit (Fig.

13, Ref. 53)(Col. 12-13, lines 46-6).



**FIG. 13**

**Claim 2**

Rosenquist et al. ('323) further discloses the reflector (Fig. 13, Ref. 92) and the light receiving unit (Fig. 13, Ref. 53) are provided so that an angle of the reflector (Fig. 13, Ref. 92) and/or a position of the light receiving unit (Fig. 13, Ref. 53) allow the light beam irradiated from the light emitting unit (Fig. 13, Ref. 44) to be reflected from the reflector (Fig. 13, Ref. 92) and received by the light receiving unit (Col. 12-13, lines 46-6).

**Claim 3**

Rosenquist et al. ('323) further discloses the sensor unit (Fig. 13, Ref. 53) is provided so that a light beam irradiation angle of the light emitting unit (Fig. 13, Ref. 44) and/or a position of the light receiving unit (Fig. 13, Ref. 53) prevent a reflected light beam from being received by the light receiving unit (Fig. 13, Ref. 53) when the light beam irradiated from the light emitting unit (Fig. 13, Ref. 44) is reflected from a corresponding planar object (Fig. 13, Ref. 25) inserted

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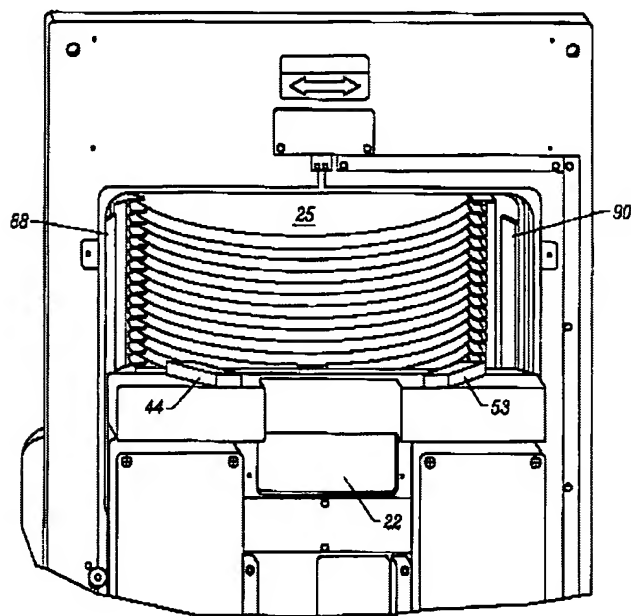
into the cassette (Col. 12-13, lines 46-6).

**Claim 4**

Rosenquist et al. ('323) further the plurality of slots (See Fig. 13) are provided in parallel to allow planar objects (Fig. 13, Ref. 25) to be inserted therein; and the at least one reflector (Fig. 13, Ref. 92) is provided at least one lateral end of the plurality of slots (See Fig. 13).

**Claim 5**

Rosenquist et al. ('323) further discloses the plurality of slots (See Fig. 12) have inlets formed therein so as to allow circular planar objects (Fig. 12, Ref. 25) to be inserted therein; and the at least one reflector (Fig. 12, Ref. 88) is provided at positions opposite to the inlets of the slots to be offset from a center position of the slots (See Fig. 12).



**FIG. 12**

**Claim 6**

Rosenquist et al. ('323) further the at least one reflector (Fig. 12, Ref. 88) is provided to

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form an acute angle with a side surface of the cassette (See Fig. 12).

**Claim 7**

The reference of Rosenquist et al. ('323) further discloses a back reflector (Fig. 13, Ref. 92) provided on a back inner surface of the slots (See Fig. 12).

**Claim 8**

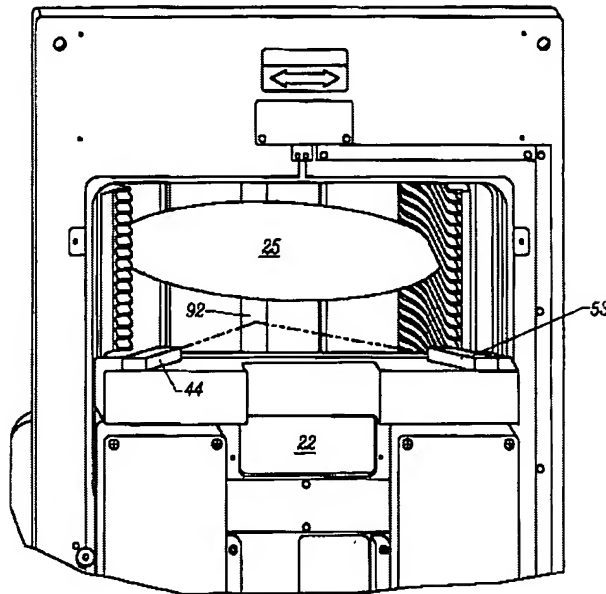
Rosenquist et al. ('323) further an irradiation position (Fig. 13, Ref. 44) of the sensor unit is offset from a center position of the slots (See Fig. 13).

**Claim 9**

Rosenquist et al. ('323) a cassette (Fig. 1, Ref. 32) having a plurality of slots (See Fig. 13), each with a predetermined thickness and width, provided in parallel to allow planar objects (Fig. 13, Ref. 25) to be inserted therein, and at least one reflector (Fig. 13, Ref. 92) to reflect a light beam irradiated into the plurality of slots (See Fig. 13); and a sensor unit having a light emitting unit (Fig. 13, Ref. 44) to irradiate the light beam and a light receiving unit (Fig. 13, Ref. 53) to receive the light beam when reflected from the reflector (Fig. 13, Ref. 92), the sensor unit determining whether the planar objects (Fig. 13, Ref. 25) have been inserted into the respective slots by irradiating the light beam while moving along a thickness direction of the slots (Fig. 1, Ref. 34, 36), and determining whether the irradiated light beam is reflected from the reflector (Fig. 13, Ref. 92) and then received by the light receiving unit (Fig. 13, Ref. 53)(Col. 12-13,

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lines 46-6).

**FIG. 13****Claim 10**

Rosenquist et al. ('323) further discloses the reflector (Fig. 13, Ref. 92) and the light receiving unit (Fig. 13, Ref. 53) are provided so that an angle of the reflector (Fig. 13, Ref. 92) and/or a position of the light receiving unit (Fig. 13, Ref. 53) allow the light beam irradiated from the light emitting unit (Fig. 13, Ref. 44) to be reflected from the reflector (Fig. 13, Ref. 92) and received by the light receiving unit (Fig. 13, Ref. 53).

**Claim 11**

Rosenquist et al. ('323) further discloses the sensor unit is provided so that a light beam irradiation angle of the light emitting unit (Fig. 13, Ref. 44) and/or a position of the light receiving unit (Fig. 13, Ref. 53) prevent a reflected light beam from being received by the light receiving unit (Fig. 13, Ref. 53) when the light beam irradiated from the light emitting unit (Fig.

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13, Ref. 44) is reflected from a corresponding planar object (Fig. 13, Ref. 25) inserted into the cassette (See Fig. 13).

**Claim 12**

Rosenquist et al. ('323) further discloses the at least one reflector (Fig. 13, Ref. 92) is provided at the at least one lateral end of the plurality of slots (See Fig. 13).

**Claim 13**

Rosenquist et al. ('323) further discloses the plurality of slots have inlets formed therein so as to allow the planar objects (Fig. 12, Ref. 25) to be inserted therein; and the at least one reflector (Fig. 12, Ref. 88) is provided at positions opposite to the inlets of the slots to be offset from a center position of the slots (See Fig. 12).

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 14-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rosenquist et al. ('323) in further view of Hofmeister ('057).

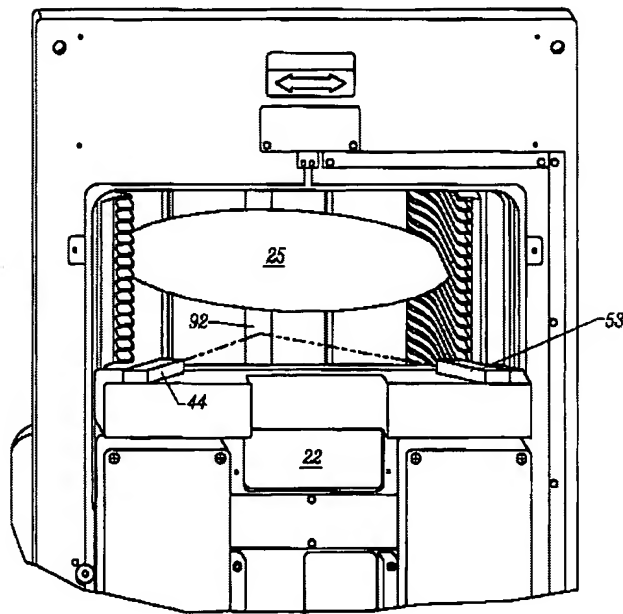
**Claim 14**

Rosenquist et al. ('323) discloses a cassette (Fig. 1, Ref. 32) having a plurality of slots (See Fig. 13), each with a predetermined thickness and width, provided in parallel, and at least one reflector (Fig. 13, Ref. 92) to reflect a light beam irradiated into the plurality of slots (See



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Fig. 13); and a sensor unit having a laser generating unit (Fig. 13, Ref. 44) to irradiate a laser beam and a light receiving unit (Fig. 13, Ref. 53) to receive the laser beam when reflected from the reflector (Fig. 13, Ref. 92), the sensor unit determining whether the flat panel have been inserted into the respective slots by irradiating the laser beam while (Fig. 1, Ref. 34, 36) moving along a thickness direction of the slots, and determining whether the irradiated laser beam is reflected from the reflector (Fig. 13, Ref. 92) and then received by the light receiving unit (Fig. 13, Ref. 53)(Col. 12-13, lines 46-6).



**FIG. 13**

Rosenquist et al. ('323) substantially teaches the claimed invention except that it does not show the use of a flat panel display. Hofmeister ('057) shows that it is known to provide of a cassette with flat panel displays (Col. 3, lines 40-45) for an apparatus transporting substrate from one location to another. It would have been obvious to combine the device of Rosenquist et al. ('323) with the flat panel display of Hofmeister ('057) for the purpose of providing an apparatus

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that is usable for many different types of semiconductor substrates, therefore making it marketable to different types of industries in the semiconductor area.

**Claim 15**

Rosenquist et al. ('323) substantially teaches the claimed invention except that it does not show the use of a flat panel display. Hofmeister ('057) shows that it is known to provide of a cassette with flat panel displays (Col. 3, lines 40-45) for an apparatus transporting substrate from one location to another. It would have been obvious to combine the device of Rosenquist et al. ('323) with the flat panel display of Hofmeister ('057) for the purpose of providing an apparatus that is usable for many different types of semiconductor substrates, therefore making it marketable to different types of industries in the semiconductor area.

**Claim 16**

Rosenquist et al. ('323) further discloses the reflector (Fig. 13, Ref. 92) and the light receiving unit (Fig. 13, Ref. 53) are provided so that an angle of the reflector (Fig. 13, Ref. 92) and/or a position of the light receiving unit (Fig. 13, Ref. 53) allow the laser beam irradiated from the laser generating unit (Fig. 13, Ref. 44) to be reflected from the reflector (Fig. 13, Ref. 92) and received by the light receiving unit (Fig. 13, Ref. 53).

**Claim 17**

Rosenquist et al. ('323) further discloses the sensor unit is provided so that a laser beam irradiation angle of the laser generating unit (Fig. 13, Ref. 44) and/or a position of the light receiving unit (Fig. 13, Ref. 53) prevent a reflected laser beam from being received by the light receiving unit (Fig. 13, Ref. 53) when the laser beam irradiated from the laser generating unit (Fig. 13, Ref. 44) is reflected from a corresponding one of the flat panel inserted into the cassette

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9Fig. 13, Ref. 25).

**Claim 18**

Rosenquist et al. ('323) further discloses the at least one reflector (Fig. 13, Ref. 92) is provided at the at least one lateral end of the plurality of slots (See Fig. 13).

**Claim 19**

Rosenquist et al. ('323) further discloses the plurality of slots have inlets formed therein so as to allow the flat panel (Fig. 12, Ref. 25) to be inserted therein; and the at least one reflector (Fig. 12, Ref. 88) is provided at positions opposite to the inlets of the slots to be offset from a center position of the slots (See Fig. 12).

6. Claims 20-27 are rejected under 35 U.S.C. 102(b) as being anticipated by Rosenquist et al. ('323).

**Claim 20**

Rosenquist et al. ('323) a cassette (Fig. 1, Ref. 32) having a plurality of slots, each with a predetermined thickness and width, provided in parallel to allow planar objects (Fig. 13, Ref. 25) to be inserted therein (See Fig. 13), and at least one reflector (Fig. 13, Ref. 92) provided lengthwise along the plurality of slots to reflect a light beam irradiated into the slots (See Fig. 13); a sensor having a light emitting unit (Fig. 13, Ref. 44) to irradiate the light beam; a light receiving unit (Fig. 13, Ref. 53) to receive the light beam when reflected from the reflector (Fig. 13, Ref. 92); and a control unit to irradiate the light beam while moving the sensor along a longitudinal direction (Fig. 1, Ref. 34, 36) of the at least one reflector (Fig. 13, Ref. 92), detect electrical characteristic variations generated in response to the irradiated light beam being

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reflected from the at least one reflector (Fig. 13, Ref. 92) and then received by the light receiving unit (Fig. 13, Ref. 53), and obtain position information of the slots with planar objects (Fig. 13, Ref. 25) inserted therein through a position of the sensor at a time the electrical characteristic variations are detected (Col. 12-13, lines 46-6).

#### **Claim 21**

Rosenquist et al. ('323) further a start position of the slots and a pitch between the slots are considered in obtaining the position information of the slots (Col. 18, lines 5-41).

#### **Claim 22**

Rosenquist et al. ('323) further discloses a cassette (Fig. 1, Ref. 32) having a plurality of slots, each with a certain thickness and width, provided in parallel to allow planar objects (Fig. 13, Ref. 25) to be inserted therein, and at least one reflector (Fig. 13, Ref. 92) provided lengthwise along the slots to reflect light beams irradiated into the slots (See Fig. 13), and a sensor having a light emitting unit (Fig. 13, Ref. 44) to irradiate a light beam and a light receiving unit (Fig. 13, Ref. 53) to receive the light beam when reflected from the at least one reflector (Fig. 13, Ref. 92), the method comprising: irradiating the light beam while moving the sensor along a longitudinal direction (Fig. 1, Ref. 34, 36) of the at least one reflector (Fig. 13, Ref. 92); detecting electrical characteristic variations generated by the sensor in response to the irradiated light beam being reflected from the at least one reflector (Fig. 13, Ref. 92) and then received by the light receiving unit (Fig. 13, Ref. 53); and obtaining position information of slots with planar objects (Fig. 13, Ref. 25) inserted therein through a position of the sensor at a time the electrical characteristic variations are detected (Col. 12-13, lines 46-6).

#### **Claim 23**

Rosenquist et al. ('323) further discloses considering a start position of the slots and a pitch between the slots when obtaining the position information of the slots (Col. 18, lines 5-41).

**Claim 24**

Rosenquist et al. ('323) discloses a receiving unit (Fig. 1, Ref. 32) comprising: a plurality of slots into which objects (Fig. 13, Ref. 25) are inserted, and at least one reflector (Fig. 13, Ref. 92) provided at a lateral side of the plurality of slots to reflect a light beam sent through the slots (See Fig. 13); and a sensor unit comprising: a light emitting unit (Fig. 13, Ref. 44) sending the light beam into the slots, and a light receiving unit (Fig. 13, Ref. 53) receiving the light beam reflected from the at least one reflector (Fig. 13, Ref. 53) in response to the respective slots being empty.

**Claim 25**

Rosenquist et al. ('323) further discloses the at least one reflector comprises a plurality of reflectors (Fig. 12, Ref. 88, 90), and a single one of the plurality of reflectors is correspondingly provided at a lateral side of each of the slots (See Fig. 12).

**Claim 26**

Rosenquist et al. ('323) further discloses a receiving unit (Fig. 1, Ref. 32) comprising: a plurality of slots into which objects (Fig. 13, Ref. 25) are inserted, and at least one reflector (Fig. 12, Ref. 88) provided at a back inner surface of the slots to be offset from a center position of the slots (See Fig. 12); and a sensor unit sending light (Fig. 12, Ref. 44) into the slots and receiving the light reflected (Fig. 12, Ref. 53) from the at least one reflector (Fig. 12, Ref. 88) in response to the respective slots being empty (See Fig. 12).

**Claim 27**

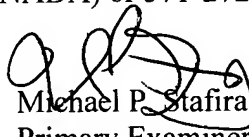
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Rosenquist et al. ('323) further discloses the at least one reflector comprises a plurality of reflectors (Fig. 12, Ref. 88, 90), and a single one of the plurality of reflectors is correspondingly provided at a back inner surface of each of the slots (See Fig. 12).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael P. Stafira whose telephone number is 571-272-2430. The examiner can normally be reached on 4/10 Schedule Mon.-Thurs..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tarifur Chowdhury can be reached on 571-272-2800 ext. 77. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
Michael P. Stafira  
Primary Examiner  
Art Unit 2886

March 14, 2007